Columns / Rows
Specifies whether the data to be analyzed is organized in columns or rows.

Tip

Use the **Shrink / Expand** buttons next to the *Variable 1 range*, *Variable 2 range*, and *Results to* fields if you need to shrink the dialog while selecting cells with the mouse.

To illustrate how to use this tool, we again use the data set from Figure 351. In this case, the data in columns A and B represent two independent sample sets, referred to as *Variable 1* and *Variable 2*. Figure 354 shows the F-test results calculated for this input data using the settings shown in Figure 353.

D	E	F
F-test		
Alpha	0.05	
	Variable 1	**Variable 2**
Mean	16.923077	20.461538
Variance	125.076923	94.435897
Observations	13	13
df	12	12
F	1.324464	
P (F<=f) right-tail	0.317061	
F Critical right-tail	2.686637	
P (F<=f) left-tail	0.682939	
F Critical left-tail	0.372213	
P two-tail	0.634123	
F Critical two-tail	0.305131	3.277277

Figure 354: Results from F-test tool

It is possible to insert different values for Alpha. The F Critical values (right-tail, left-tail, and two-tail) will be updated automatically.

Tip

For more information on F-tests, refer to the corresponding Wikipedia article at https://en.wikipedia.org/wiki/F-test.

Z-test tool

The Z-test tool calculates the Z-test of two data samples. The tool performs a two sample Z-test to test the null hypothesis that there is no difference between the means of the two data sets. The Z-test works better for large samples (n > 30); if you are using a small sample, the Paired t-test tool may be more appropriate. Click **Data > Statistics > Z-test** on the Menu bar to access the z-test dialog shown in Figure 355 and define the required inputs to the tool.

Variable 1 range
Specifies the cell range containing the first set of input data.

Variable 2 range
Specifies the cell range containing the second set of input data.

Results to
Specifies the top left cell of the results area. When you run the tool, it will generate the Z-test table starting at this cell.

Columns / Rows
Specifies whether the data to be analyzed is organized in columns or rows.